



RESOURCE AND PATIENT MANAGEMENT SYSTEM

# Health Summary Components (BHS)

## Technical Manual

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## Preface

The VA Health Summary is the desired tool for the reports tab of the Electronic Health Record (EHR). The VA Health Summary is more configurable for clinicians to use in a graphical user environment. VA Health Summary can also be used to make patient data objects to include in progress notes and templates. However, VA health summaries do not cover the wide range of V-files that Indian Health Service uses. This package is a transformation of Indian Health Service summary components into VA health summary components.

This manual contains the technical documentation for the Health Summary Components v1.0. Included here are a system description, routine descriptions, option descriptions, and a variety of other information necessary for use by IRM personnel to operate and maintain the Health Summary Components software.

## 1.0 Introduction

As time has passed, the health summary applications of VA and Indian Health Service have moved in different directions. The Indian Health Service Summary has retrieved the vast majority of its data from the PCC V files while the VA Health Summary gets most of its data from other patient files, such as laboratory and pharmacy. The VA has also developed some separate applications such as the Ad Hoc Health Summary where a user can create a health summary on the fly from any components attached to the ad hoc health summary type. This leaves providers free to make health summaries based on patient need at the moment and not on IRM needing to make a health summary type to incorporate the components the physician wishes to use.

The VA Health Summary in conjunction with Text Integrated Utility (TIU) has also created health summary objects. Any clinical applications coordinator (CAC) with access to the TIU setup options can make a VA health summary and then turn it into an object for inclusion in templates and notes. This capability frees the CAC to make very specific objects without the need for a programmer.

The VA Health Summary does not however, include many of the components that are unique to IHS.

IHS unique components include flow-sheets, supplements, measurement panels, as well as many other PCC V-files that are not used by the VA. This application called Health Summary Components transplants the Indian Health Service Summary Components into VA Health Summary components to be used in TIU health summary objects, VA ad hoc health summary type, as well as other health summaries.

The menus and options to create these health summaries are the standard VA Health Summary options which can be found in the documentation for the VA Health Summary.

The namespace for VA Health Summary is GMTS. The components created for this application are in the namespace BHS. There are no options to create these components. The menus and options to create a TIU health summary object are found in the TIU namespace and in the TIU documentation.

## 2.0 Implementation and Maintenance

### 2.1 General Information

The Health Summary Component subsystem occupies the BHS namespace. Options, security locks/keys, templates, routines, and globals are namespaced.

The Health Summary Components are MUMPS programs used to add components to the VA Health Summary Components file. These components already exist in the Indian Health Service Health Summary Components file (APCH) but cannot be utilized in the VA ad hoc summary or by TIU in the creation of health summary objects which can be added to progress notes.

Therefore, the components were re-written to be used by the VA Health Summary software. Only components were created. The user can use the VA Health Summary options to add these components to VA Health Summary types.

Indian Health Service has several files that do not exist in the VA Health Summary. Some of these are accessed and used by the VA Health Summary components to provide the same functionality as the IHS Health Summaries.

In order to provide the user with maximum flexibility to tailor existing summaries and create new summary types, File Manager files store the definitions of summary types and measurement panels, which are independent entities that may be referenced on multiple summaries and the inventory of components from which summaries may be built.

The health summary is produced through the execution of a series of code segments that independently produce the text output for each section of the summary. Each component of the summary has such a code segment. Adding a new component implies writing a MUMPS program.

### 2.2 System Requirements

Kernel 8.0 patch 1011 or higher

FileMan 22 patch 1002 or higher

PCC Management Reports Version 3.0 patch 13 or later

Taxonomy System Version 5.1 patch 7 or later

XB/ZIB Utilities Version 3.0 patch 10 or later

GMTS V 2.7 patch 68 or later

APCH V 2.0 patch 13 or later

## 2.3 Security Keys

No new security keys are used. The keys are the same as those for the VA Health Summary.

## 3.0 Routines

### 3.1 Description of Routines

Routine Name	Data Extracted
BHSAPRO	Action Profile
BHSASM	Asthma Registry Data
BHSBCH	Community Health Data
BHSBH	Behavioral Health
BHSBH1	Behavioral Health – continued
BHSDEN	Dental data driver routine
BHSDEN0	Printout of dental data
BHSDEN1	Dental procedures
BHSDEN2	Dental follow-up, no shows, etc.
BHSDTUR	Turnaround form
BHSDM1	Diabetes Supplement
BHSDM2	Diabetes Supplement
BHSDM3	Diabetes Supplement
BHSDM4	Diabetes Supplement
BHSDM5	Diabetes Supplement
BHSDM6	Diabetes Supplement
BHSDM7	Diabetes Supplement
BHSEDASS	Educational Assessment
BHSENC	Outpatient Encounters
BHSENC2	Outpatient Encounters without CHR
BHSENC5	Scheduled Encounters
BHSENCW	Scheduled Encounters w/o Chart Req and Walk-ins
BHSEYEKG	Eye clinic and EKG procedures



<b>Routine Name</b>	<b>Data Extracted</b>
BHSFAM1	Offspring history, reproductive hx, treatments
BHSFLOA	Flow sheet continuation
BHSFLOW	Flow sheet
BHSHOS	Hospital encounters
BHSHS1	Family history, personal history, history of surgery
BHSHS2	Driver for asthma, behavioral health, RCIS, CHR
BHSHS3	Insurance, elder care, refusals
BHSINS	Insurance
BHSLAB	V lab data
BHSLAB1	Cont of V lab data
BHSLABA	V lab data most recent
BHSLABB	V lab data by date
BHSMBN	V meds – meds by name
BHSMEA	Measurements
BHSMEAP	Measurement panels
BHSMED	V Med data
BHSMEDAL	V Med data – issued and alt date
BHSMEDG	V Med data – by group
BHSMEDH	V Med data – all with issue date historic
BHSMEDI	V Med data – issue date
BHSMEDSF	V Med data – short form
BHSM SUP	V Med supplement – reorder document by date
BHSM SUP1	V Med supplement – reorder document by name
BHSMU	Utilities – Finds data for components – mainly diabetes supplement
BHSMU1	Utilities – Finds data for components – mainly diabetes supplements
BHSMU2	Utilities – Finds data for components – mainly diabetes supplements

<b>Routine Name</b>	<b>Data Extracted</b>
BHSNT	Narrative Text
BHSPHN	Public health nursing visits
BHSRAD	V Radiology Data
BHSRCIS	Referred care
BHSSUPP	Supplements
BHSSUR	Minor Surgical procedure
BHSUTL	Utilities for displaying ICD, narratives etc
BHSWH	Continuation of women's health profile
BHSWPROF	Women's health profile

Figure 3-1: Table of routines and descriptions

## 4.0 Files

The only new file needed is a copy of Indian Health Service Summary Supplements. This file is necessary because the supplements contain printing formats that are not used by the VA Health Summary application and cannot be accessed without changing their underlying code.

This file is numbered 90471 and is ^BHS(90471. It is named BHS SUPPLEMENTS, and performs the same functions as the VA Health Summary supplements.

## **5.0 Cross References**

BHS SUPPLMENTS

01 NAME OF SUPPLEMENT 90471^B

## 6.0 Exported Options

There are no exported options. The options to use BHS are all on the VA Health Summary options.

## **7.0 Menu Diagram**

There are no menus exported with this package.

## **8.0 Archiving and Purging**

There is no archiving and purging in this package.

## 9.0 External Relations

This package calls the following documented entry points:

CKP^GMTSUP  
REGDT4^GMTSU  
PLAST^BATU  
DXAST^BATU  
^AUPNFH  
SP2^BATSUM  
SORT^BWPROF2  
KILLALL^BWUTL8  
SLDT2^BWUTL5  
PNLAB^BWUTL5  
INSTTX^BAUTL6  
CHR^BCHDHS  
^BMCREF  
BNEED^BWUTL1  
CNEED^BWUTL1



## 10.0 Internal Relations

All users should be given the access to the appropriate options and keys to them, as needed. Since this package is a subset of VA Health Summary (GMTS), the user should have the GMTSMGR key to access these options.

## 11.0 How to Generate Online Documentation

The file number range for this package is 90470-90474. The namespace is BHS. All templates, routines, screen forms, etc. begin with BHS.

This section describes some of the methods by which users can generate health summary system technical documentation. Online technical documentation pertaining to the Health Summary Component software can be generated through the use of several kernel options. These include, but are not limited to, the following:

- %INDEX
- Menu Management
- Inquire Option
- Print Option File
- VA FileMan
- Data Dictionary Utilities
- List File Attributes

Entering question marks at the “Select...Option” prompts can also provide users with valuable technical information. For example, a single question mark (?) lists all options that can be accessed from the current option. Entering two question marks (??) lists all options accessible from the current one, showing the formal name and lock for each.

Three question marks (???) displays a brief description for each option in a menu, whereas an option name preceded by a question mark (?OPTION) shows extended help, if available, for that option.

For a more exhaustive option listing and further information about other utilities that supply online technical information, please consult the DHCP Kernel Reference manual.

### 11.1 %INDEX

This option analyzes the structure of a routine to determine in part if the routine adheres to RPMS Programming Standards. The %INDEX output can include the following components:

- Compiled list of errors and warnings
- Routine listing
- Local variables
- Global variables

- Naked globals
- Label references
- External references

By running %INDEX for a specified set of routines, you are afforded the opportunity to discover any deviations from RPMS Programming Standards that exist in the selected routines and to see how routines interact with one another (i.e., which routines call or are called by other routines).

To run %INDEX for the Health Summary Component package, specify the BHS namespace at the Routine(s)?> prompt.

**Note:** Health Summary Component initialization routines that reside in the UCI in which %INDEX is being run, compiled template routines, and local routines found within the APCH namespace should be omitted at the Routine(s)?> prompt. To omit routines from selection, preface the namespace with a minus sign (-).

## 11.2 Inquire Option

This menu management option provides the following information about a specified option:

- Option name
- Menu text
- Option description
- Type of option
- Lock (if any)

In addition, all items on the menu are listed for each menu option. To secure information about Health Summary Component options, you must specify the BHS namespace.

## 11.3 Print Option File

This utility generates a listing of options from the Option file (#19). You can choose to print all of the entries in this file or you can specify a single option or range of options. For a list of Health Summary Component options, please refer to the Exported Options section of this manual.

## 11.4 List File Attributes

This VA FileMan option allows you to generate documentation pertaining to files and file structure. Using the Standard format of this option yields the following data dictionary information for a specified file:

- File name and description
- Identifiers
- Cross-references
- Files pointed to by the file specified
- Files that point to the file specified
- Input, print, and sort templates

In addition, the following applicable data is supplied for each field in the file:

- Field name, number, title, and description
- Global location
- Help prompt
- Cross-references
- Input transform
- Date last edited
- Notes

Using the Global Map format of this option generates an output that lists the following information:

- All cross-references for the file selected
- Global location of each field in the file
- Input, print, and sort templates

For a comprehensive listing of Health Summary Component package files, please refer to the Files section of this manual.

## **12.0 SAC- Requirements/Exemptions**

N/A

## 13.0 Glossary

### **Archiving**

The storing of historical or little-used data off-line (often on tape).

### **Banner**

A line of text with a user's name and domain.

### **Browser**

An interactive application that displays ASCII text on a terminal that supports a scroll region. The text can be in the form of a word-processing field or sequential local or global array. The user is allowed to navigate freely within the document.

### **Callable Entry Points**

Places in a routine that can be called from an application program.

### **Component**

A segment of the health summary that provides a mechanism for grouping data into sections.

### **Cross-reference**

An indexing method whereby files can include pre-sorted lists of entries as part of the stored database. Cross-references (x-refs) facilitate look-up and reporting.

### **Entry Point**

Entry point within a routine that is referenced by a "DO" or "GOTO" command from a routine internal to a package.

### **File**

A set of related records or entries treated as a single unit.

### **FileMan**

The database management system for RPMS.

### **Flow sheet**

A tabular format for organizing and displaying data in a special section of the health summary.

### **Global**

In MUMPS, global refers to a variable stored on disk (global variable) or the array to which the global variable may belong (global array).

**Health Summary**

A summary of a patient's demographic and clinical information that has been compiled from information in the Patient Care Component (PCC) database of the Resource and Patient Management System (RMPS).

**ICD**

International Classification of Diseases.

**INDEX (%INDEX)**

A Kernel utility used to verify routines and other MUMPS code associated with a package. Checking is done according to current ANSI MUMPS standards and RPMS programming standards.

This tool can be invoked through an option or from direct mode (>D ^%INDEX).

**Init**

Initialization of an application package. The initialization step in the installation process builds files from a set of routines (the init routines). Init is a shortened form of initialization.

**Internal Entry Number (IEN)**

The number used to identify an entry within a file. Every record has a unique internal entry number.

**IRM Information Resource Management**

The IHS personnel responsible for information systems management and security.

**Kernel**

The set of MUMPS software utilities that function as an intermediary between the host operating system and application packages, such as Laboratory and Pharmacy. The Kernel provides a standard and consistent user and programmer interface between application packages and the underlying MUMPS implementation. These utilities provide the foundation for RPMS.

**Menu**

A list of choices for computing activity. A menu is a type of option designed to identify a series of items (other options) for presentation to the user for selection. When displayed, menu-type options are preceded by the word "Select" and followed by the word "option" as in Select Menu Management option: (the menu's select prompt).

**Namespace**

A unique set of 2 to 4 alpha characters that are assigned by the database administrator to a software application.

**Option**

An entry in the Option file. As an item on a menu, an option provides an opportunity for users to select it, thereby invoking the associated computing activity. Options may also be scheduled to run in the background, non-interactively, by TaskMan.

**Panel**

A tabular format for presenting a series of clinical measurements or results in the health summary.

**Patient Care Component (PCC)**

The central repository for data in the Resource and Patient Management System (RPMS).

**Queuing**

Requesting that a job be processed at a later time rather than within the current session.

**Routine**

A program or sequence of instructions called by a program that may have some general or frequent use. MUMPS routines are groups of program lines that are saved, loaded, and called as a single unit via a specific name.

**UCI**

User Class Identification: a computing area.

**Up-Hat (^)**

A circumflex, also know as a “hat” or “caret,” that is used as a piece delimiter in a global. The up-hat is denoted as “^” and is typed by pressing Shift+6 on the keyboard.

**Utility**

A callable routine line tag or function. A universal routine usable by anyone.

**Variable**

A character or group of characters that refers to a value.

MUMPS recognizes 3 types of variables: local variables, global variables, and special variables. Local variables exist in a partition of the main memory and disappear at sign-off. A global variable is stored on disk, potentially available to any user. Global variables usually exist as parts of global arrays.



## 14.0 Contact Information

If you have any questions or comments regarding this distribution, please contact the OIT Help Desk (IHS).

**Phone:** (505) 248-4371 or (888) 830-7280 (toll free)

**Fax:** (505) 248-4363

**Web:** <http://www.ihs.gov/GeneralWeb/HelpCenter/Helpdesk/index.cfm>

**Email:** [support@ihs.gov](mailto:support@ihs.gov)